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Annual RCRA Consent Decree Public Meeting

October 25, 2005

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• Purpose and Introductions	Jon Nickel
• Cleanup of East Helena Plant Under Montana Consent Decree	Iver Johnson
• Annual Update of RCRA Consent Decree	
• Residential Well Sampling Program	Jon Nickel
• Monitoring Well Sampling Program	Bob Miller
• Future Programs	Bob Miller
• EPA Update on Groundwater Treatment	Linda Jacobson
• Pilot Scale Program (PRB)	
• EPA Update on Residential Soil Removal	Scott Brown
• Project and Future Program	
• Lewis and Clark County Health Department	Deb Tillo
• Lead Education and Abatement Program	

RCRA Consent Decree for the East Helena Plant:

- Purpose: Evaluate Environmental Impacts from Smelter
- Consists of:
  - Interim Measures and RFI
  - On-going Monitoring Program

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Interim Measures and RFI

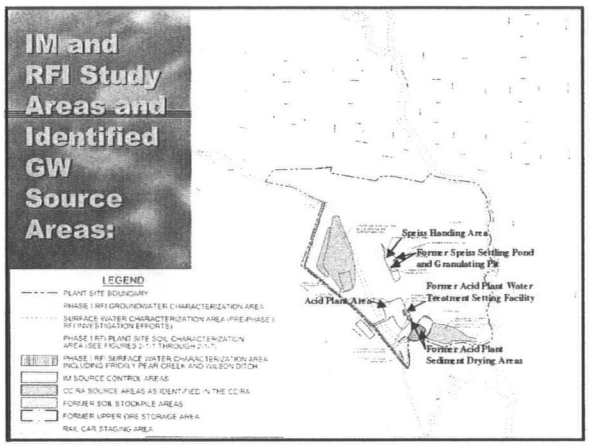
Interim Measures

- Addressed Facility GW Source Areas
- Implemented During the 1998 through 2002 Period.

RFI

- Characterized Soils, Groundwater and Surface Water
- Completed RFI Report 2003 and Revised in 2005.

IM and RFI Study Areas and Identified GW Source Areas:



On-Going Long-Term Monitoring Program

- Water Supply Sampling Program:
  - Residential Wells
  - Municipal Wells
  - Industrial Water Supply Well
- Monitoring Well Network Sampling
  - Sampling of 105 Monitoring Wells
  - Groundwater Level Measurement of 123 Monitoring Wells

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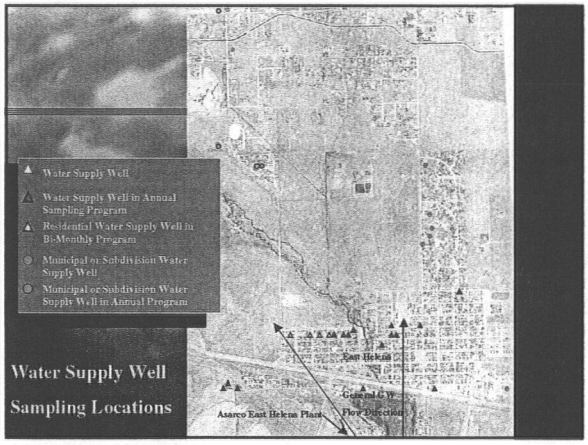
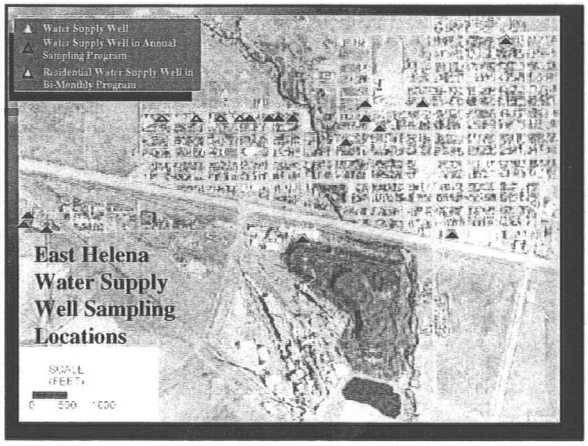


Water Supply Well Sampling Locations

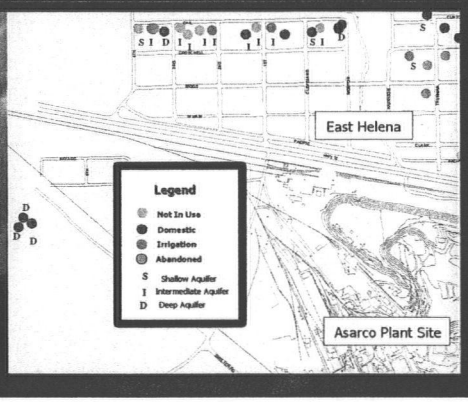
focus on Gale St. wells.
- looked at E. Helena wells, Twilight Trailer wells



East Helena Water Supply Well Sampling Locations

32 annual
4 every other month

Residential Well Locations



Some As from natural sources

Residential Water Quality Results

- The Montana Drinking Water Standard is 20 ppb. The EPA Standard is 10 ppb.
- All Sampled Downgradient Residential Drinking Water Wells are less than the Montana and EPA Standards.
- All Sampled Downgradient Residential Drinking Water Wells Remain At or Below Laboratory Detection Limit of 2 ppb.
- Some Sampled Upgradient Residential Wells are above the Montana and EPA Standards.

- offers to collect samples from anyone's well if they are interested

On-Going Long-Term Monitoring Program

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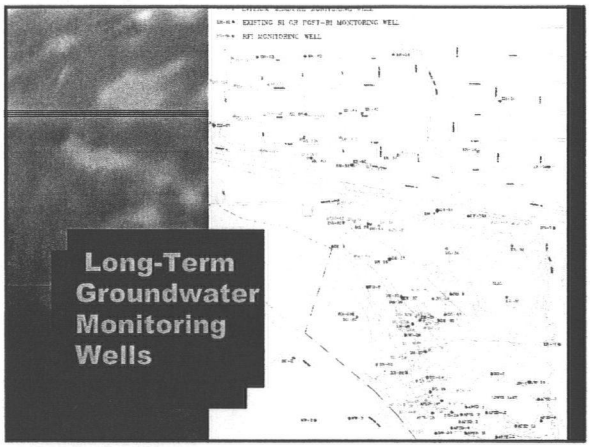
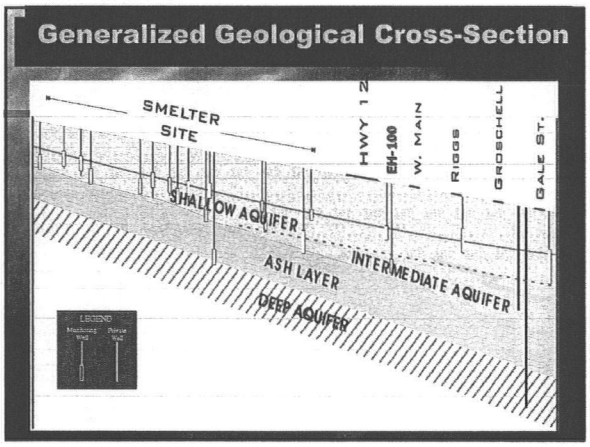
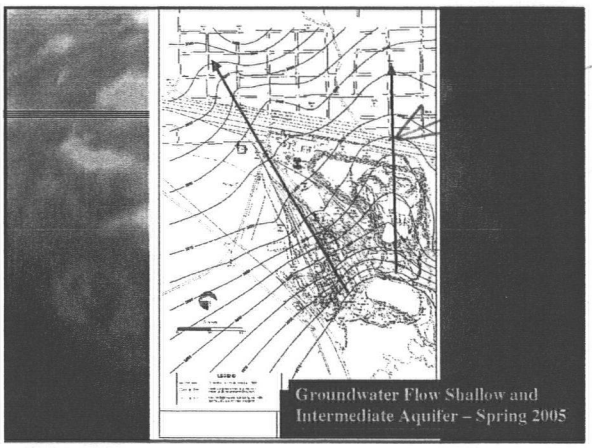
MT municipalities challenged trying to meet stds

Average As – background
Bob 20-50ppb typical background

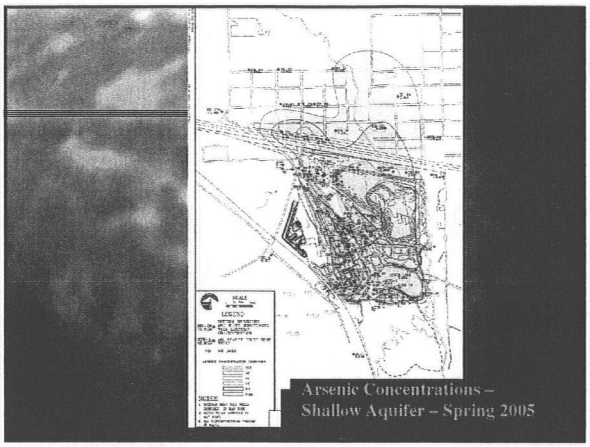


7 125 wells

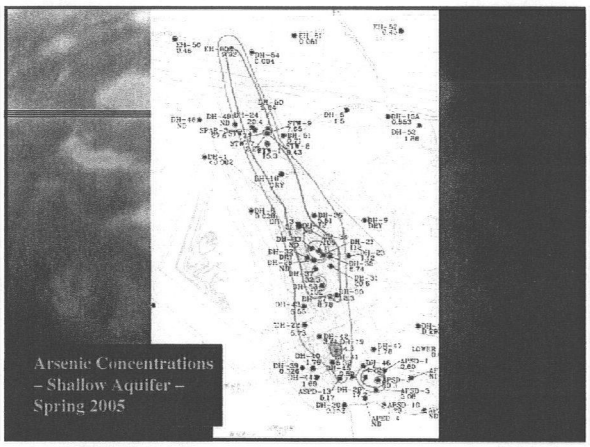




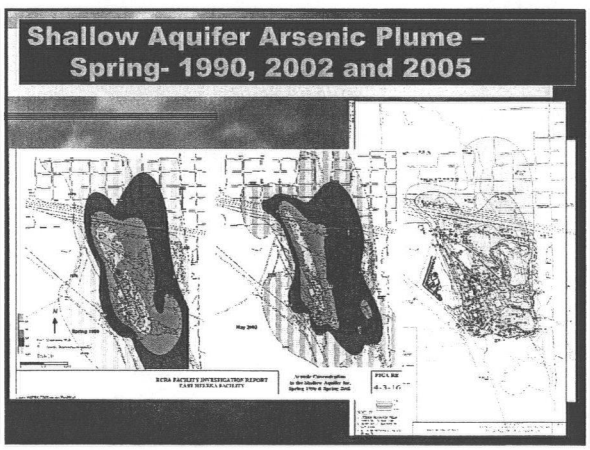
shallow – northwardly plume

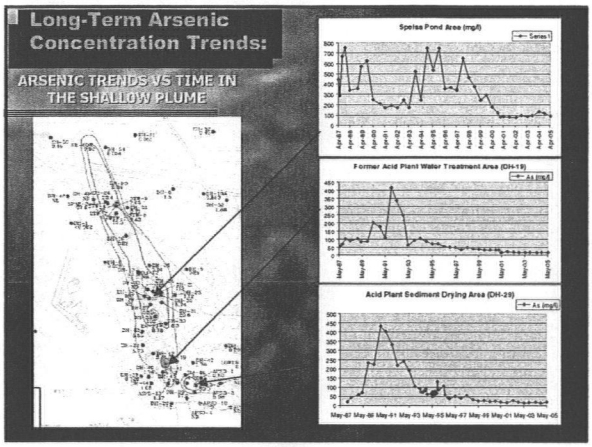


- historic lower aquifer plume driven by Lower Lake.

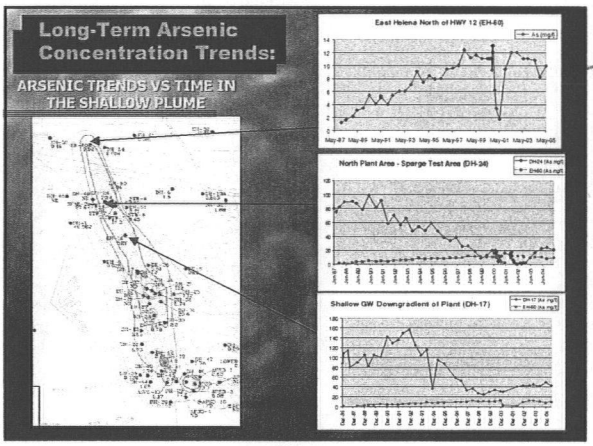


Acid sed. dry bed area

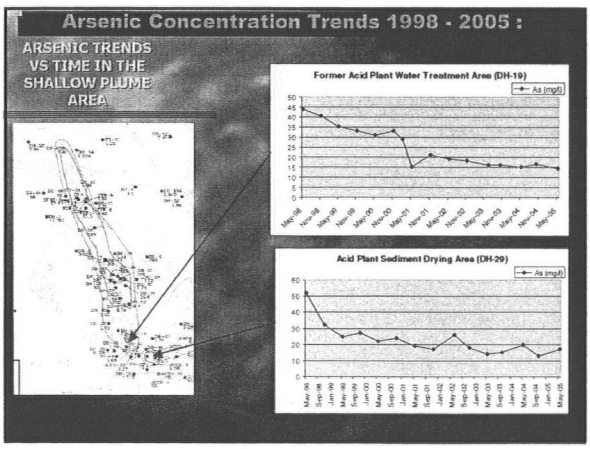


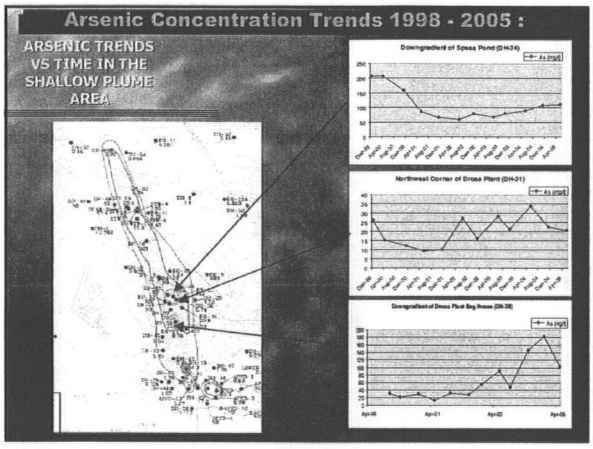


Interim Measures taken to clean up things



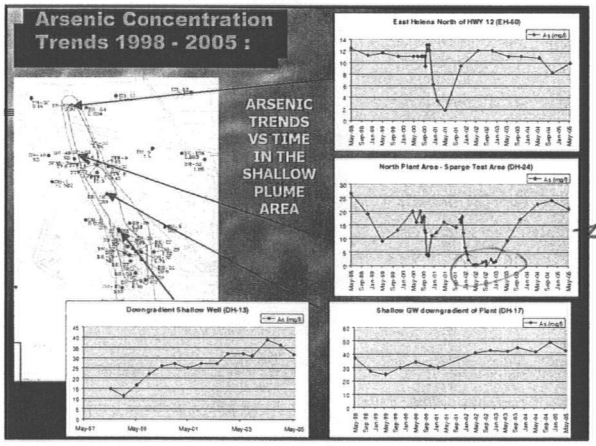
← leach in E. Helena water line



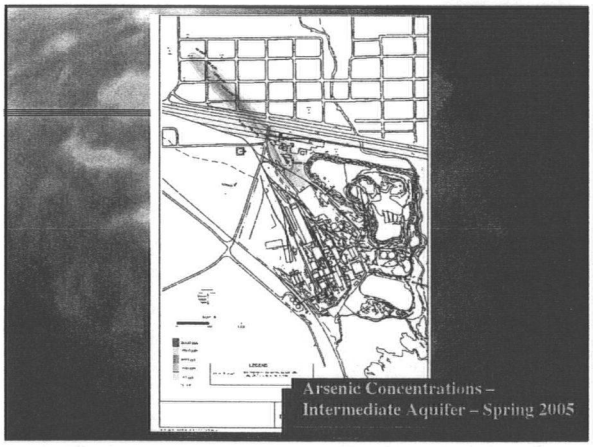


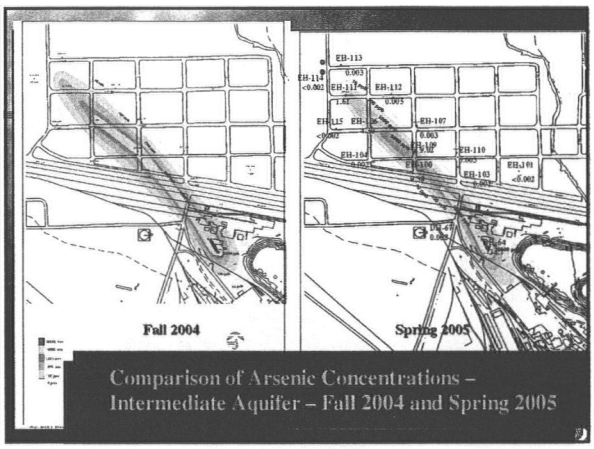
Plant water circuits controlled

2 ft. water level decline - assay increases there.

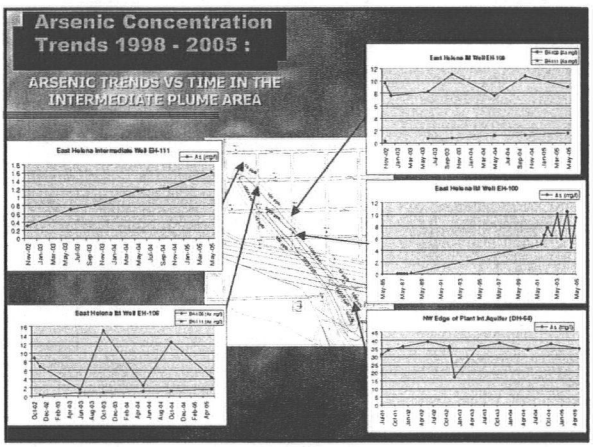


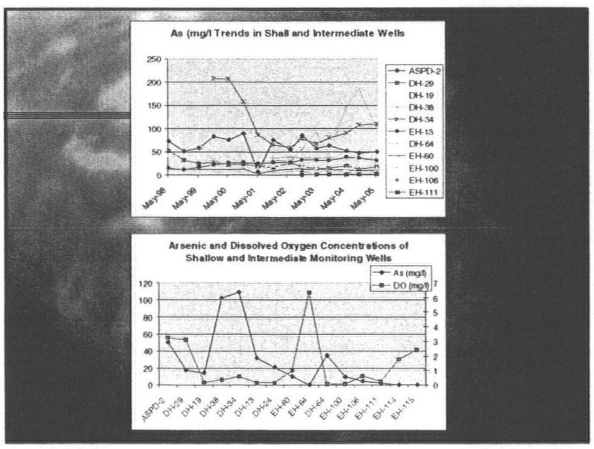
sparge testing work concn increased after started.





fairly narrow alluvial channel - preferential pathway - didn't see in early '80's - developed recently





GroundWater Monitoring Results:

- Groundwater flows to the north and northwest. Higher flow rates in coarser grained sand and gravel alluvium: lower flow rates in finer grained silts and sand.
- The shallow aquifer has elevated arsenic concentrations in a northwest trending plume. The plume extends north of Highway 12. Primary sources are historical losses of plant process fluids.
- Remedial measures have generally resulted in long-term trends of decreasing arsenic concentrations on the plant site.

GroundWater Monitoring Results:

- Monitoring wells in the Dross-Speiss Area show recent trends of increasing arsenic concentrations.
- Repair of plant process water circuit losses in 1999 and suspension of plant operations in 2001 are coincident with this increase.
- Shallow wells down-gradient of the plant also show increasing trends in this period.

GroundWater Monitoring Results:

- The shallow aquifer arsenic plume is underlain by an intermediate aquifer arsenic plume that extends into the northwest portion of the City of East Helena.
- The width and extent of the intermediate aquifer plume is controlled by narrow coarse grained sand and gravel channel deposits.

- shallow aquifer?
- semantics than reality: shallow wells/deeper transport differently the material
- nature of the material
- sometimes separation layer & sometimes not

GroundWater Monitoring Results:

- Most wells in the intermediate aquifer arsenic plume show arsenic concentrations are seasonally variable, with no obvious trends of increasing or decreasing concentrations.
- Well EH-111, at the northwest edge of the plume, shows a generally increasing arsenic concentration trend.
- Two additional monitoring wells are scheduled for construction and sampling in October 2005.

Preliminary 2005 and 2006 Groundwater Interim Measures Schedule:

• Prepare 2005 Groundwater Interim Measures Work Plan	November 2005
• Evaluation of Interim Measures for Groundwater	December 2005 through April 2006
• EPA Review and Comment and Selection of IM	April 2006 through June 2006
• Implementation of Groundwater Measures	June 2006 through December 2006

plume arrested by change in alluvial package or just missed it & plume migrated through it.

Seasonal variations:
May 2005
next Nov. 2005

contract driller problem:
- trending on seasons - fall vs. spring.